Notice No.2

Rules and Regulations for the Classification of Linkspans

July 2019

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: June 2020

Amendments to	Effective date	IACS/IMO implementation (if applicable)
Part 3, Chapter 1, Section 6	Corrigenda	N/A
Part 4, Chapter 4, Sections 2, 3, 8, 9 & 12	Corrigenda	N/A

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Part 3, Chapter 1
General Conditions and Requirements

■ *Section 6*
Acceptance testing of pontoons, bridges, ramps and walkways

6.1 Pontoons

6.1.1 **Hose testing.** Any watertight doors, bulkheads, tunnels or weathertight deck closures are to be pressure hose tested, with a hose supply pressure of at least ~~2,0 bar~~ 0,2 MPa, from a maximum distance of 1,5 m, to the Surveyor's satisfaction.

6.1.3 **Leak testing.** Leak testing is required on fillet weld connections on tank boundaries. This test is also required on erection welds on tank boundaries except for welds made by automatic processes. Selected locations of automatic erection welds and pre-erection manual or automatic welds may be required to be similarly tested at the discretion of the Surveyor taking account of the quality control procedures operating in the yard. This test is carried out by applying a soapy water solution to the weld being tested while the tank is subjected to an air pressure of ~~0,15 bar~~ 0,015 MPa. It is recommended that, with a minimum number of personnel in the vicinity of the tank, the air pressure in the tank is raised to ~~0,20 bar~~ 0,02 MPa and kept at this level for about one hour to reach a stabilized state, and then lowered to the test pressure prior to inspection. Leak testing is to be carried out before a protective coating is applied.

Part 4, Chapter 4
Piping and Pressure Vessel Design Requirements

■ *Section 2*
Pressure vessels

2.1 Design

2.1.1 All pressure vessels where the conditions either (a) or (b) detailed below apply are to be designed in accordance with a pressure vessel standard acceptable to LR:

(a) The vessels contain vapours or gases, e.g. air receivers, hydrophore or similar vessels and CO$_2$ vessels for fire-fighting, and
pV > ~~600~~ 60
p > ~~1~~ 0,1
V > 100

(b) The vessel contains liquefied gases, for fire-fighting or flammable liquids, and
p > ~~7~~ 0,7
V > 100

where

V = volume in litres
p = design pressure in ~~bar~~ MPa

■ *Section 3*
Class of pipes

3.1 General

Table 4.3.1 Maximum pressure and temperature conditions for Class II and III piping systems

Piping system	Class II		Class III	*T*
	p	*T*	*p*	
	~~bar~~ MPa	°C	~~bar~~ MPa	°C
Flammable liquids (*see* Note)	~~16,0~~ 1,6	150	~~7,0~~ 0,7	60
Other media	~~40,0~~ 4,0	300	~~16,0~~ 1,6	200

■ *Section 8*
Plastic pipes

8.3 Design strength

8.3.2 The nominal internal pressure, p_{Ni}, (in MPa) of the pipe is to be determined by the lesser of the following:

$$P_{\text{Ni}} \le \frac{P_{\text{st}}}{4}$$

$$P_{\text{Ni}} \le \frac{P_{\text{lt}}}{4}$$

where

p_{st} = short term hydrostatic test failure pressure, in ~~bar~~ MPa

p_{lt} = long term hydrostatic test failure pressure (100 000 hours), in ~~bar~~ MPa

8.3.4 The nominal external pressure, p_{Ne}, (in MPa) of the pipe, defined as the maximum total of internal vacuum and external static pressure head to which the pipe may be subjected, is to be determined by the following:

$$P_{\text{Ne}} \le \frac{P_{\text{col}}}{3}$$

where

p_{col} = pipe collapse pressure, in ~~bar~~ MPa

8.3.5 p_{col} is not to be less than ~~3 bar~~ 0,3 MPa.

■ *Section 9*
Material certificates

9.1 Metallic materials

Table 4.9.1 Maximum conditions for pipes, valves and fittings for which Manufacturer's materials test certificate is acceptable

Material	Working temperature ºC	*DN* = nominal diameter, mm P_{w} = working presser, ~~bar~~ MPa
Carbon and low alloys steel~~.~~ Stainless steel~~.~~	< 300	*DN* < 50 or
Spheroidal or nodular cast iron~~.~~		P_{w} x *DN* < ~~2500~~ 250
Copper alloy	< 200 or P_{w} x *DN* < ~~1500~~ 150	*DN* < 50

■ *Section 12*
Hydraulic tests on pipes and fittings

12.1 Hydraulic tests before installation

12.1.1 All Class I and II pipes and their associated fittings are to be tested by hydraulic pressure. Further, compressed air and flammable liquid pipes, together with their fittings, are to be similarly tested where the design pressure is greater than ~~7 bar~~ 0,7 MPa. The test is to be carried out after completion of manufacture and before installation and, where applicable, before insulating and coating.

12.1.3 Valves, cocks and distance pieces intended for installation on the shell are to be tested by hydraulic pressure to not less than ~~5 bar~~ 0,5 MPa.

12.2 Testing after assembly

12.2.1 Flammable liquid piping is to be tested by hydraulic pressure, after installation, to 1,5 times the design pressure but in no case to less than ~~3,5 bar~~ 0,35 MPa.

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